



Hyperhidrosis

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What is Hyperhidrosis?



- ◆ Sweating that is more than required to maintain normal thermal regulation

Sweating Nomenclature

- ◆ Areas: Focal, regional, generalized
- ◆ Symmetry: Symmetric or asymmetric
- ◆ Classification: Primary vs. secondary
- ◆ Type of sweating: Anhidrosis, euhydrosis, hyperhidrosis

Hyperhidrosis

General



Secondary to a variety of conditions^{1,2}

Primary (idiopathic)¹

Focal



Associated with neuropathies³

Secondary to spinal disease/injury³

1. Stolman LP. *Dermatol Clin.* 1998;16:863-869. 2. Atkins JL, Butler PE. *Plast Reconstr Surg.* 2002;110:222-228.
3. Sato K et al. *J Am Acad Dermatol.* 1989;20:713-726

Causes of Generalized Hyperhidrosis

Usually secondary in nature

- ◆ Drugs, toxins, substance abuse
- ◆ Cardiovascular disorders
- ◆ Respiratory failure
- ◆ Infections
- ◆ Malignancies
 - ◆ Hodgkin's, myeloproliferative disorders, cancers with increased catabolism
- ◆ Endocrine/metabolic disorders
 - ◆ Thyrotoxicosis, pheochromocytoma, acromegaly, carcinoid tumor, hypoglycemia, menopause
- ◆ Rarely Idiopathic / Primary HH

Causes of Localized Hyperhidrosis

- ◆ Usually Idiopathic / Primary
- ◆ Social anxiety disorder
- ◆ Eccrine nevus
- ◆ Gustatory sweating
- ◆ Frey syndrome
- ◆ Impaired evaporation
- ◆ Stump hyperhidrosis after amputation

Idiopathic (Primary) Focal Hyperhidrosis

- ◆ Onset mostly at puberty or early adulthood
- ◆ Predilection sites: axillae, palms, soles, face
- ◆ Pathogenesis



Palmar disease: thenar eminence

US Prevalence

Survey mailed to a representative sample of 150,000 US households in January 2002



64% response rate



Approximately 6,800 respondents with hyperhidrosis



Projected to the US population



Prevalence of hyperhidrosis in the US is 2.8% (7.8 million individuals)

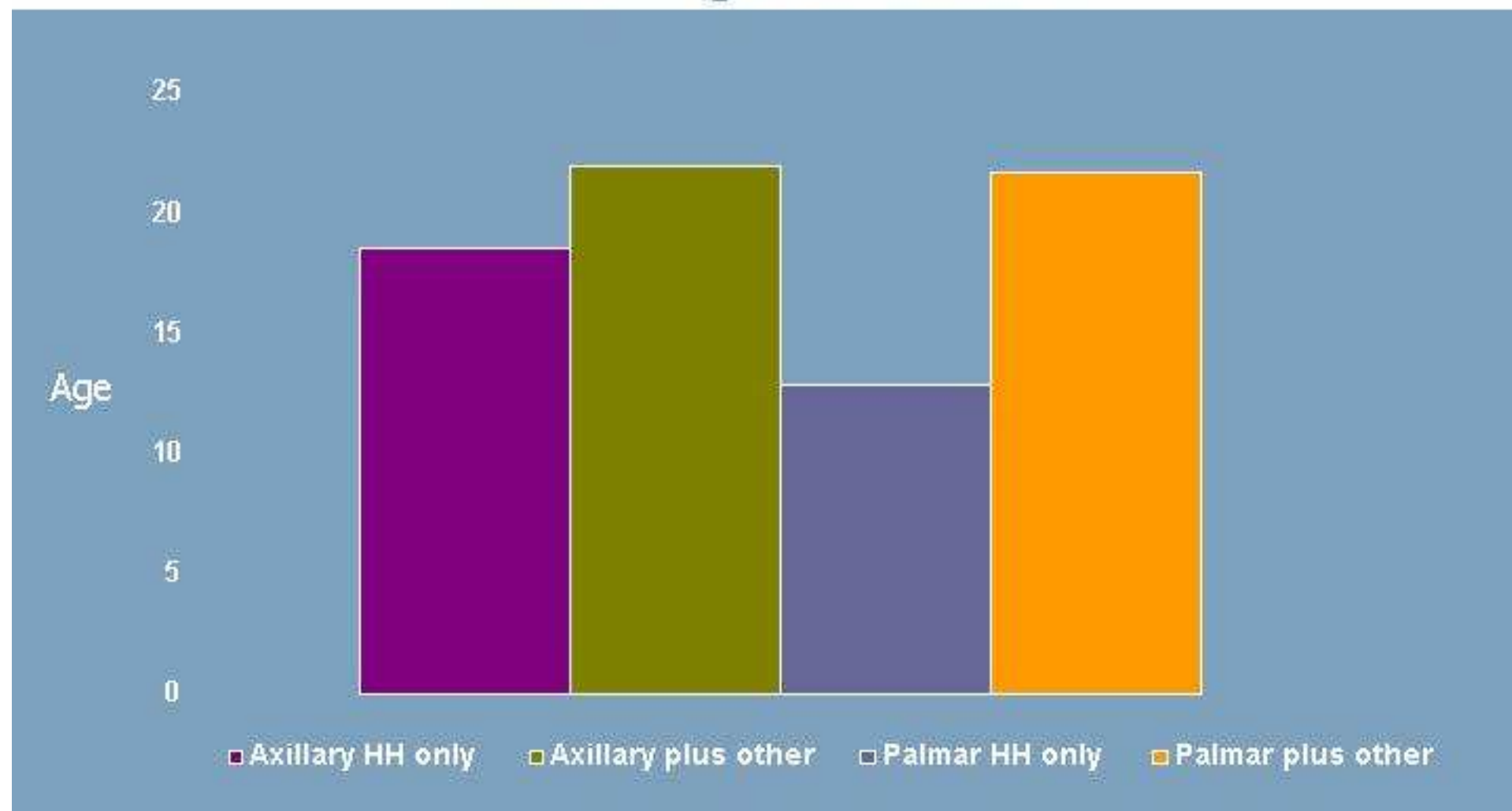


50.8% have axillary hyperhidrosis: US prevalence is 1.4% (4 million individuals)



32.4% of individuals with axillary hyperhidrosis (**0.5% of the US population** or 1.3 million people) have sweating that is barely tolerable and frequently interferes with their daily activities, or is intolerable and always interferes with their daily activities (based on the HDSS).

Mean Age of Onset



Strutton DR, Kowalski JW, Glaser DA, Stang PE. American Academy of Dermatology 61st Annual Meeting; March 21-26, 2003; San Francisco, Calif. Abstract P362.

Heredity/Genetics

- ◆ Herbst, Ann Surg 1994
 - Retrospective questionnaire following ETS for 1° hyperhidrosis
 - 270/323 patients responded
 - 31.5% reported positive family history

- ◆ Ro, J Vasc Surg 2002
 - Controlled prospective study of patients with 1° hyperhidrosis presenting for ETS
 - 49/58 patients responded to detailed FH questionnaire
 - 65% reported + FH (.28 risk offspring, .14 risk parents)
 - Concluded gene present in 5% of population with 25% penetrance

Diagnosis of Primary Focal Hyperhidrosis

- ◆ Focal, visible, excessive sweating of at least 6 months duration without apparent cause with at least 2 of the following characteristics:
 - Bilateral and relatively symmetric
 - Impairs daily activities
 - Frequency of at least one episode per week
 - Age of onset less than 25 years
 - Positive family history
 - Cessation of focal sweating during sleep

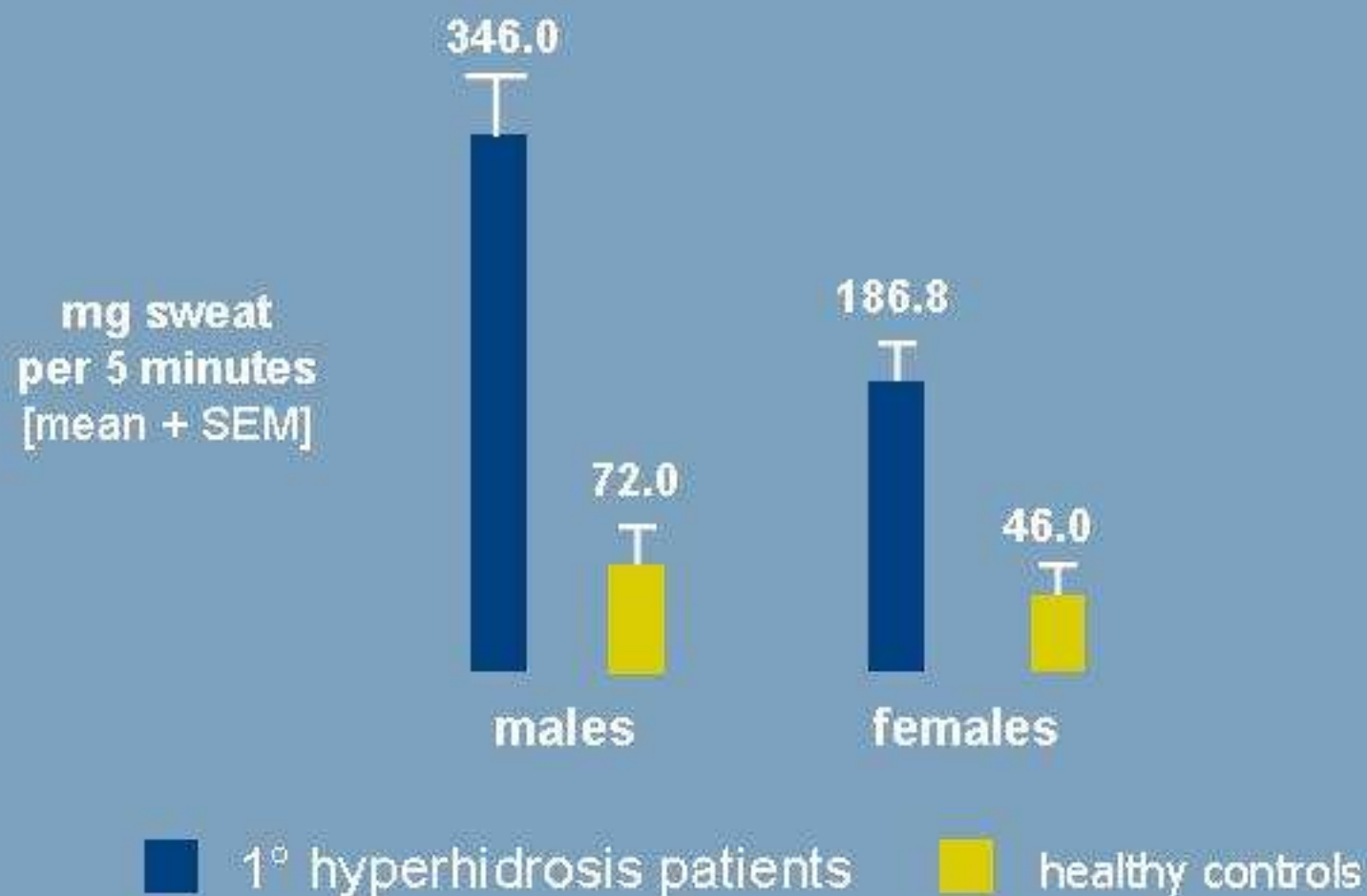
Diagnostic Work-up

- ◆ History
 - Age of onset
 - Location
 - Trigger factors
 - Review of symptoms
- ◆ Physical exam
- ◆ Laboratory evaluation
 - Gravimetric -
1° research tool
 - Starch iodine - defines area of disease



Starch iodine test, with the darkened area showing location of excessive sweating

Axillary Sweat Production



DLQI Total Scores and Ranges by Dermatological Disease/Condition

Diseases with DLQI Scores 10 or Greater

Disease	DLQI Score (baseline)
Hyperhidrosis palms	18-8.8
Hyperhidrosis axillary	17-10
Eczema (inpatient)	16.2
Focal hyperhidrosis (general)	15.5-9.2
Psoriasis (inpatient)	13.9
Hyperhidrosis forehead	12.5
Atopic eczema	12.5-5.8
Psoriasis (outpatient)	11.9-4.51
Contact dermatitis	10.8
Pruritus	10.5-10

Scores range from 0 to 30, with 30 indicating the worst quality of life.

Quality of life: Primary Axillary Hyperhidrosis

- ◆ Less confident 72%
- ◆ Unhappy/depressed 49%
- ◆ Change type of leisure activities 45%
- ◆ Frustrated with daily activities 30%
- ◆ Miss outings/events 25%
- ◆ Decrease time in leisure activities 19%

Quality of Life: Primary Palmar Hyperhidrosis

- Interference with daily tasks 95%
- Social embarrassment 90%
- Psychological difficulties 40%

100 patients, palmar, presenting for sympathectomy

Available Treatments

- ◆ Topical agents
- ◆ Iontophoresis
- ◆ Systemic agents
- ◆ Botulinum toxin
- ◆ Surgery
 - Sweat gland resection
 - ETS

Treatment Response



Before treatment



Placebo



After treatment



Placebo

Starch iodine test, with the darkened area showing location of excessive sweating

Summary

Primary Focal Hyperhidrosis is a separate and unique disease

- Bilateral & symmetric
- Axilla, palms, soles, craniofacial
- Onset in childhood and adolescence
- Significant impact on quality of life
- Effective therapies